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ABSTRACT

This study investigated social problem solving (SPS) and cognitive style (field dependence-independence) in 70 counselor trainees who were also elementary or secondary school teachers. Specifically, the study attempted to analyze and describe the SPS responses of counselor trainees; to examine whether SPS elements, styles, and processes varied depending on the type of problem; and to determine the influence of individual differences on the SPS of counselors. Protocol analysis was used to determine how subjects solved ill-defined interpersonal, intrapersonal, complex, and simple problems. Problem situations were scored for eight SPS elements (e.g., strategy, evaluation), three SPS processes (sequential, holistic, simultaneous), and three SPS styles (analytical, affective, behavioral). Results indicated that subjects used more analysis and evaluation of self on intrapersonal problems, while employing more evaluation of strategies on interpersonal problems. On simple problems, subjects used more strategies, elaborations, and problem statements, while on complex problems they used more analysis, evaluations and feeling statements. (Author/NB)

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Protocol Analysis of Social Problem Solving in Counselor Trainees

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Abstract

This study investigated social problem solving (SPS) and cognitive style (field independence-dependence) in a sample of 70 counselor trainees. To examine SPS, protocol analysis was utilized to determine how adults solved ill-defined interpersonal, intrapersonal, complex, and simple problems. Problem situations were scored for eight SPS elements (e.g., strategy, evaluation), three SPS processes (sequential, wholistic, simultaneous), and three SPS styles (analytical, affective, behavioral). Results indicated that trainees used more analysis and evaluation of self on intrapersonal problems, while employing more evaluation of strategies on interpersonal problems. On simple problems, trainees utilized more strategies, elaborations, and problem statements, while on complex problems they utilized more analysis, evaluations, and feeling statements.

Protocol Analysis of Social Problem Solving in Counselor Trainees

Problem solving is increasingly viewed as an essential skill in counseling (Carkhuff, 1983; Gazda, Asbury, Balzar, Childers, & Walters, 1984). Egan (1986), in particular, conceptualizes the counseling process within a problem-solving framework with the goal of counseling being to help clients solve the problems of daily living. Problem solving, in this context, refers to social problem solving (SPS), the process utilized by people to cope effectively with the problematic situations of everyday life (D'Zurilla & Goldfried, 1971).

In contrast, most previous problem-solving research has generally focused on well-structured problems: problems with a single, correct solution (Frederiksen, 1984). However, the types of problems confronting counselors are ill-defined social problems: problems that are more complex and have less specific criteria for knowing when the problem is solved (Simon, 1978).

In considering SPS, the goals of the present study are three-fold. The first goal is to provide an analysis and description of the SPS responses of counselor trainees. This goal focuses on a novel aspect of counselors' problem-solving skills that has not previously been examined in the research literature. To assess SPS, Platt and Spivack (1975) developed the Means-Ends Problem-Solving Procedure (MEPS). From this instrument, researchers most often use the number of relevant means (strategies) generated by

problem solvers. The assumption is made that better problem solvers generate more strategies. However, when one considers the intricacies of social problems, it is not necessarily true that developing a large number of strategies is more effective than generating one appropriate strategy. Therefore, instead of thinking solely in terms of quantitative problem solving, it is helpful to adopt a more process-oriented approach to SPS. Very few studies have investigated the actual processes used by counselors as they attempt to solve social problems. Do all counselors use a similar approach with social problems? What are the specific elements or skills used to tackle different types of problems?

To answer these questions, the present study utilized protocol analysis to examine qualitative aspects of the MEPS responses in addition to the standard quantitative scoring procedures. Ericsson and Simon (1984) advocate protocol analysis of self-reported reflections as a method for generating a more complete model of problem-solving processes than can be inferred from quantitative outcome scores alone. Through protocol analysis, eight problem-solving elements (problem statement, elaboration, strategy, reason, evaluation of self, evaluation of strategy, analysis, feeling), three problem-solving styles (analytical, affective, behavioral), and three problem-solving processes (sequential, wholistic, simultaneous) were identified.

The second goal of this study is to examine whether these SPS elements, styles, and processes varied depending on the type of

problem. Heppner and Krauskopf (1987) affirm the need to examine different problem-solving processes in relation to dissimilar problems because of evidence that individual's problem-solving processes vary across problem types. Two different dimensions were chosen for the present study as having particular applicability to the types of social problems brought by clients to counselors: interpersonal versus intrapersonal problems and simple versus complex problems.

The third goal of this study focuses on the possible influence of individual differences on the SPS of counselors. Some of the differences present in counselors' approaches to SPS are likely due to intraindividual factors that are separate from the type of problem being solved. Heppner and Krauskopf (1987) suggest that the cognitive style construct of field independence-dependence could be one such variable interacting with SPS. When cognitive style is considered together with Platt and Spivack's (1975) approach to SPS, it is hypothesized that FI counselors will generate more strategies for intrapersonal problems because of their individualistic, internal frames of reference, while FD counselors will generate more strategies for interpersonal problems with their greater proclivity for a social frame of reference (Witkin, 1978; Witkin & Goodenough, 1981).

In summary, the present study is designed to increase our knowledge of the SPS elements, styles, and processes utilized by counselors when solving intrapersonal, interpersonal, complex,

and simple social problems. In addition, the influence of cognitive style on SPS is examined.

Method

The participants were 70 (35 men and 35 women) elementary and secondary teachers who volunteered from four different class sections of a summer university program in guidance counseling. Ages ranged from 25 to 55 years, while teaching experience ranged from 1 to 25 years.

The Group Embedded Figures Test (Witkin, Oltman, Raskin, & Karp, 1971) was used to measure field independence and was administered on the first day of class. The Means-Ends Problem-Solving Procedure (Platt & Spivack, 1975) was utilized to measure SPS and was administered toward the end of the course. Items on this measure were divided into an equal number of interpersonal and intrapersonal situations. The same situations were also divided into an equal number of simple and complex items.

An in vivo measure of SPS was also given at the end of the course. Participants counseled fellow students on both an interpersonal and intrapersonal concern. After the interviews, counselors completed a standardized form which asked them how they would solve their client's problem if it were their own problem. Responses to this measure were scored in the same manner as the MEPS. For the protocol analysis of these measures, a manual based on one by Henshaw (1979) was developed using practice protocols. Scoring of the problem-solving protocols was done by two raters who received eight hours of training and 20

hours of practice over a 4-week period. Cohen's (1960) coefficient of interjudge agreement was calculated for the three scoring scales: problem-solving elements (.80), styles (.92), and processes (.91).

Results

The statistical design for the study was a two-factor (3 x 2) design with repeated measures over one factor. The between-subjects factor consisted of three levels of cognitive style (FD, Mid, FI) and the within-subjects factor consisted of two types of problem situation (interpersonal versus intrapersonal or complex versus simple). Analogue and in vivo measures of problem solving were the dependent variables.

To address the first goal of the study, describing counselors' SPS, descriptive statistics for the eight problem-solving elements were examined to clarify patterns in the data. Not all participants utilized all eight elements in their problem solutions. Strategies were the only element used by all participants for all types of problems.

However, patterns could be detected among the types of elements used on different types of problems. To assess the second and third goals of the study, assessing whether counselor's SPS varied by problem type and cognitive style, two different MANOVA's were performed. In the first MANOVA, cognitive style was the between-subjects factor, interpersonal versus intrapersonal problems was the within-subjects factor, and

frequencies for the eight problem-solving elements were the dependent variables.

The main effect of cognitive style and the interaction effect between cognitive style and problem situation were both statistically nonsignificant. However, there was a statistically reliable overall main effect of problem situation on scores from the MEPS of the problem-solving elements, $F(8,60) = 4.71$, $p < .001$. This effect (see Figure 1) appeared to be traceable to statistically reliable univariate F values for the following elements: participants utilized significantly more analysis and more evaluation of self with intrapersonal problems, $F(1,67) = 11.86$ and 11.35 respectively, $p < .001$; and significantly more evaluation of strategies with interpersonal problems, $F(1,67) = 10.38$, $p < .01$. Thus, with interpersonal problems that involve more of the outside world, participants employed more evaluation of things outside of themselves, while with intrapersonal problems, they engaged in more internal analysis and questioning of themselves.

In the second MANOVA, cognitive style and problem complexity (simple versus complex) were the independent variables and problem-solving elements were the dependent variables. Again, there was no main effect of cognitive style and no interaction effect between cognitive style and problem complexity. However, there was a main effect of problem complexity on problem-solving elements, $F(8,60) = 11.28$, $p < .001$. This main effect appeared to be due to statistically reliable univariate F values for 7 of

the 8 problem-solving elements (see Figure 2). On simple problems, participants utilized more strategies, elaboration, and problem statement. Thus, participants found it easier to generate more strategies for simpler problems and were more "chatty" with descriptive detail. On complex problems, participants employed more analysis, evaluation of strategies, evaluation of self, and feeling statements. It is understandable that complex problems would require more analysis and evaluation and that participants would have more feelings about them than they would about more superficial problems.

With problem-solving style, most participants used more than one style on the eight problems. On interpersonal problems, participants used a behavioral style significantly more often than the other styles, while on intrapersonal problems, they used a greater variety of styles (see Figure 3). Once again, finding that participants more often utilized a behavioral style is not surprising when one considers that interpersonal problems occur in the world outside of the individual, and thus could easily be thought of in terms of the behaviors needed to solve them.

As with problem-solving style, most participants also employed a variety of problem-solving processes. However, when problems were separated into interpersonal versus intrapersonal, and simple versus complex categories, there were no apparent differences between these conditions with respect to sequential, wholistic, and simultaneous problem-solving processes. However, there was a relationship between cognitive style and problem-

solving processes regardless of type of problem situation. There was a statistically reliable relationship between FI and a sequential process and between FD and a wholistic process.

Discussion

One of the goals of the present study was to determine whether the individual difference variable of cognitive style influenced the SPS of counselor trainees. The results showed the relationship to be weak to nonexistent. It may be that because adults are required to adapt increasingly to complex social environments, they learn to compensate for limitations of their particular cognitive style when the situation requires it. In other words, "situations" rather than "person" variables may be the dominant determinant in understanding the SPS of counselors. This position was supported by the analysis of the SPS data in this study.

Another goal of the present study was simply to describe the many facets of SPS. In the major SPS models (D'Zurilla & Goldfried, 1971; Spivack, Platt, & Shure, 1976), the assumption is made that people either do, or should, solve problems in relatively uniform ways. However, the results of this study suggest that participants employed quite different problem-solving elements, styles, and processes rather than approaching problems uniformly. The implication of this finding is that it may be inappropriate for counselors to use a single, uniform approach for helping clients to solve their social problems.

A third goal focused on the impact of problem type on SPS. The results indicate that participants used quite different problem-solving elements depending on the type of problem situation confronting them. This variation in approaching different types of ill-defined problems suggests a need for different kinds of interventions with different client problems. For example, with intrapersonal and complex problems, participants were more contemplative as they used more internal, introspective elements. Therefore, a more cognitive therapeutic approach would likely complement the analysis and evaluation that some clients would naturally be utilizing. Conversely, with interpersonal and more superficial or simple problems, a goal-directed, behavioral therapeutic approach would likely complement the client's natural tendency toward strategic action.

Once the counselor has observed and assessed the client's SPS style and determined the type of problem, the counselor needs to facilitate the acquisition of problem-solving skills appropriate to ill-defined social problem contexts. Otherwise, clients and counselors may attempt unsuccessfully to utilize more linear problem-solving models designed for well-structured problems when confronted with complex, ill-defined problems.

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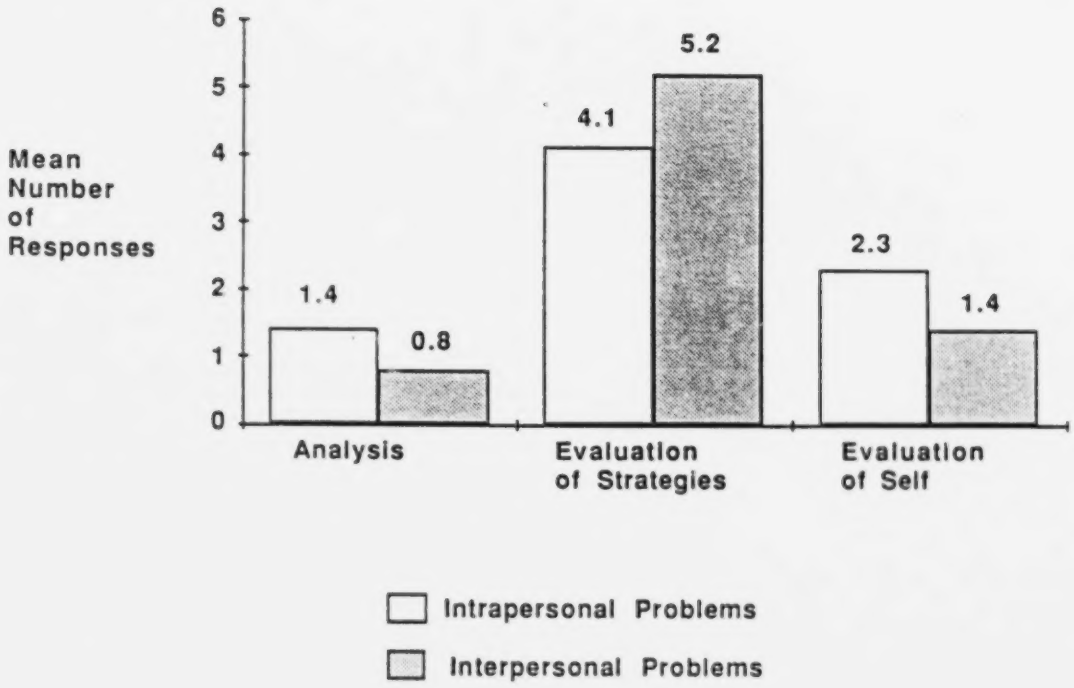

Figure 1. Significant differences in mean number of problem-solving elements on intrapersonal versus interpersonal problems.

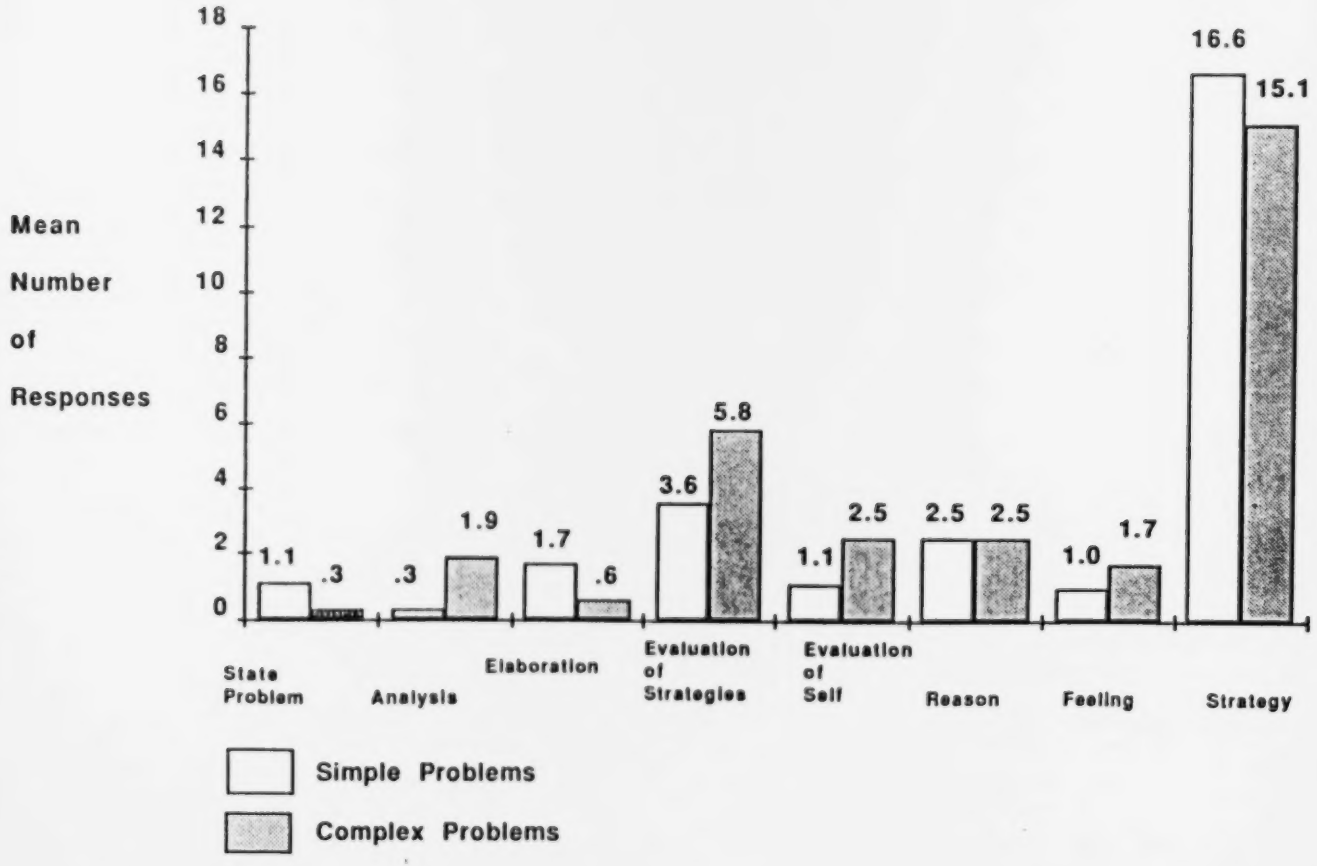

Figure 2. Significant differences in mean number of problem-solving elements on complex versus simple problems.

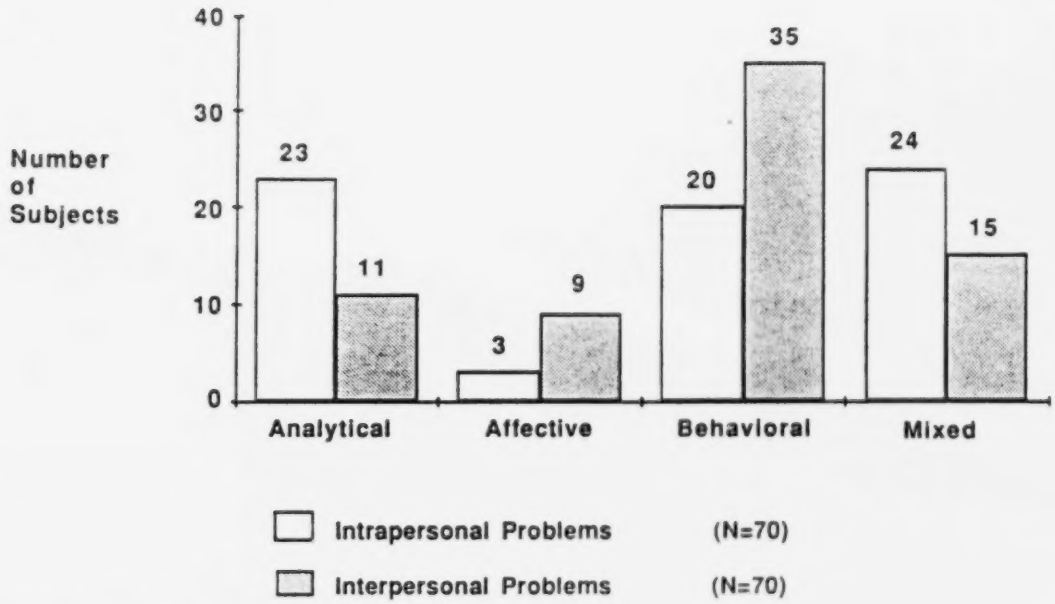

Figure 3. Frequency of problem-solving styles utilized by subjects on intrapersonal versus interpersonal problems.